Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method of collecting stem cells from an isolated, exsanguinated mammalian placenta, said method comprising:

perfusing said placenta with a perfusion solution in an amount and for a time sufficient to collect a detectable amount of stem cells from said placenta, said placenta having been drained of cord blood and flushed to remove residual blood prior to said perfusing, and wherein said perfusing is performed by passing said perfusion solution into one or both of the umbilical artery and umbilical vein of said placenta; and

collecting said stem cells and perfusion solution from said placenta.

2-24. (Canceled)

25. (Previously presented) A method of collecting $CD34^+$ stem cells from an isolated and exsanguinated mammalian placenta, said method comprising:

perfusing said placenta with a perfusion solution in an amount and for a time sufficient to collect a detectable amount of said $CD34^+$ stem cells, wherein said placenta has been drained of cord blood and flushed to remove residual blood prior to said perfusing, wherein said $CD34^+$ stem cells are not obtained from cord blood, and wherein said perfusing is performed by passing said perfusion solution into one or both of the umbilical artery and umbilical vein of said placenta; and

collecting said $CD34^+$ stem cells and perfusion solution from said placenta.

26-28. (Canceled)

29. (Currently amended) The method of claim 1 wherein said placenta is ~~cultured~~ maintained for at least four hours after removal of said residual blood and prior to said perfusing.

30. (Currently amended) The method of claim 1 wherein said placenta is ~~cultured~~ maintained for at least twelve hours after removal of said residual blood and prior to said perfusing.

31. (Currently amended) The method of claim 1 wherein said placenta is ~~cultured for at least~~ maintained for twenty-four hours after removal of said residual blood and prior to said perfusing.

32. (Previously presented) The method of claim 1 wherein said perfusing is performed using a first volume of between about 30 ml and about 150 ml of said perfusion solution.

33. (Previously presented) The method of claim 32, further comprising continuing said perfusing using a second volume of about 30 ml to about 150 ml of said perfusion solution, said second volume being collected separately from said first volume.

34. (Previously presented) The method of claim 1, in which said perfusing is performed for a plurality of times.

35. (Previously presented) The method of claim 34, wherein, for each of said times, said perfusing is performed using a volume of about 30 ml to about 150 ml of said perfusion solution.

36. (Previously presented) The method of claim 32, further comprising separating said stem cells from said perfusion solution.

37-39. (Canceled)

40. (Previously presented) The method of claim 1 wherein said perfusion solution contains an anticoagulant.

41. (Previously presented) The method of claim 32 wherein said perfusion solution comprises an anticoagulant.

42. (Previously presented) The method of claim 34 wherein said perfusion solution comprises an anticoagulant.

43. (Previously presented) The method of claim 1, wherein said perfusion solution comprises heparin, ethylene diamine tetra acetic acid (EDTA) or creatine phosphate dextrose (CPDA).

44. (Previously presented) The method of claim 1, wherein said perfusion solution comprises a growth factor or a cytokine.

45. (Previously presented) The method of claim 44, wherein said growth factor or cytokine is selected from the group consisting of a colony stimulating factor, interferon, erythropoietin, stem cell factor, thrombopoietin, an interleukin, granulocyte colony-stimulating factor, and a combination of any thereof.

46. (Previously presented) The method of claim 1, wherein said isolated mammalian placenta is a post-partum placenta remaining after a successful birth.

47-48. (Canceled)

49. (Currently amended) The method of claim 25 wherein said perfusing is performed at least four hours after removal of said residual blood.

50. (Currently amended) The method of claim 25 wherein said perfusing is performed at at least twelve hours after removal of said residual blood.

51. (Currently amended) The method of claim 25 wherein said perfusing is performed at at least 24 hours after removal of said residual blood.

52. (Previously presented) The method of claim 25, wherein said perfusing is performed using a first volume of between about 30 ml and about 150 ml of said perfusion solution.

53. (Previously presented) The method of claim 52, further comprising continuing said perfusing using a second volume of about 30 ml to about 150 ml of said perfusion solution, said second volume being collected separately from said first volume.

54. (Previously presented) The method of claim 25, in which said perfusing is performed for a plurality of times.

55. (Previously presented) The method of claim 54, wherein, for each of said times, said perfusing is performed using a volume of about 30 ml to about 150 ml of said perfusion solution.

56-59 (Canceled)

60. (Previously presented) The method of claim 25 wherein said perfusion solution comprises an anticoagulant.

61. (Previously presented) The method of claim 52 wherein said perfusion solution comprises an anticoagulant.

62. (Previously presented) The method of claim 54 wherein said perfusion solution comprises an anticoagulant.

63. (Previously presented) The method of claim 25, wherein said perfusion solution comprises heparin, ethylene diamine tetra acetic acid (EDTA) or creatine phosphate dextrose (CPDA).

64. (Previously presented) The method of claim 25, wherein said perfusion solution comprises a growth factor or a cytokine.

65. (Previously presented) The method of claim 64, wherein said growth factor or cytokine is selected from the group consisting of a colony stimulating factor, interferon, erythropoietin, stem cell factor, thrombopoietin, an interleukin, granulocyte colony-stimulating factor, and a combination of any thereof.

66. (Previously presented) The method of claim 25, wherein said isolated mammalian placenta is a post-partum placenta remaining after a successful birth.

67. (Canceled)

68. (Previously presented) The method of claim 1 or claim 25, wherein said stem cell is multipotent.

69. (Canceled)

70. (Previously presented) The method of claim 33, further comprising separating said stem cells from said perfusion solution.

71. (Previously presented) The method of claim 32 wherein said stem cells are collected over a period of up to 48 hours.

72. (Previously presented) The method of claim 33 wherein said stem cells are collected over a period of up to 48 hours.

73. (Previously presented) The method of claim 25 further comprising separating said $CD34^+$ stem cells from cells other than $CD34^+$ stem cells and said perfusion solution.

74. (Previously presented) The method of claim 52, further comprising separating said $CD34^+$ stem cells from said perfusion solution.

75. (Previously presented) The method of claim 53, further comprising separating said $CD34^+$ stem cells from said perfusion solution.

76. (Previously presented) The method of claim 52 wherein said $CD34^+$ stem cells are collected over a period of up to 48 hours.

77. (Previously presented) The method of claim 53 wherein said $CD34^+$ stem cells are collected over a period of up to 48 hours.